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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,418	11/02/2001	Yu-Chin Lai	P03079	7683

7590 05/21/2003

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EXAMINER

PENG, KUO LIANG

ART UNIT	PAPER NUMBER
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1712

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DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,418

Applicant(s)

LAI ET AL.

Examiner

Kuo-Liang Peng

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/9/03 Response.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 8-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The Applicants' response to restriction requirement filed on May 9, 2003 was received.
2. Applicant's election of the invention of Group I (Claims 1-7 and 28-29) in Paper No. 4 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Groups II-V, Claims 8-27, are withdrawn for further consideration.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is noted that R₂ cannot be methyl; otherwise there are no aromatic substituents.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1712

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okawa (US 5 223 596).

Okawa discloses a difunctional polysiloxane containing phenyl and methyl groups. The difunctional polysiloxane is terminated at both ends with either aminoalkyl or a hydroxyl group. The molecular weight of the difunctional polysiloxane can be from 1000 to 100,000 (col. 2, lines 34-49). The aminoalkyl group can be exemplified as aminopropyl group (Example 1). The hydroxyl group can be exemplified as hydroxypropyl group (Example 4). The molar ratio of the phenyl groups to methyl groups in the difunctional polysiloxane is exemplified as 5:39 (Examples 1 and 4).

Okawa is silent on a difunctional polysiloxane with the molar ratio of phenyl groups to methyl groups being specifically no less than 1:4 and the refractive index being at least approximately 1.45. However, Okawa further discloses a monofunctional polysiloxane having a molar ratio of the phenyl groups to methyl groups being 8:28 (Examples 5 and 8). Therefore, Okawa does teach a polysiloxane having a backbone with a molar ratio of the phenyl groups to methyl groups being 8:28. Okawa further teaches a well-known motivation of introducing of diphenylsiloxane units, into a polydimethylsiloxane, i.e., for improving radiation resistance, heat resistance, etc. (col. 1, lines 48). In light of the above benefit, it would have been obvious to one of ordinary skill in the art at the time of the invention to increase the relative amount of the phenyl groups in the backbone of aforementioned difunctional polysiloxane so that it has a molar

Art Unit: 1712

ratio of the phenyl groups to methyl groups being 8:28 in order to obtain a more desirable radiation resistance, heat resistance, etc., and thereby obtain the present invention. Since the phenyl group is the only source which can significantly enhance the refractive index of the difunctional polysiloxane, a difunctional polysiloxane having a backbone wherein the molar ratio of the phenyl groups to the methyl groups of the difunctional polysiloxane of 8:28 (i.e., more than 1:4) should have a refractive index of at least approximately 1.45.

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Cekada (US 3 624 190) discloses a linear polydiorganosiloxane containing up to 40 mol% of 2-phenylpropyl or 2-phenylethyl substituents. The polydiorganosiloxane can be end-capped with hydroxyl groups (i.e., not hydroxyalkyl groups) (col. 1, line 65 to col. 2, line 31 and col. 6, lines 25-41 and 74 and col. 11, compound C). Furthermore, Cekada discloses a linear polydiorganosiloxane end-capped with trimethylsiloxy containing 20 mol% of 2-phenylpropyl substituents. This polydiorganosiloxane has a refractive index of 1.4640 (Example 1). However, Cekada does not teach or fairly suggest that the polydiorganosiloxanes being end-capped hydroxyalkyl groups or aminoalkyl groups or having methylphenylsiloxane units.

Okawa does not teach or fairly suggest a polydiorganosiloxane having methylphenylsiloxane units.

Allowable Subject Matter

8. Claims 28-29 are allowed.

9. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest reference: Okawa and Cekada.

Okawa does not teach or fairly suggest a polydiorganosiloxane having $\text{MePhSiO}_{2/2}$ units, where Me is a methyl group and Ph is a C_{6-30} aromatic substituent.

Cekada discloses a linear polydiorganosiloxane containing up to 40 mol% of 2-phenylpropyl or 2-phenylethyl substituents. The polydiorganosiloxane can be end-capped with hydroxyl groups (i.e., not hydroxyalkyl groups) (col. 1, line 65 to col. 2, line 31 and col. 6, lines 25-41 and 74 and col. 11, compound C). Furthermore, Cekada discloses a linear polydiorganosiloxane end-capped with trimethylsiloxy containing 20 mol% of 2-phenylpropyl substituents. This polydiorganosiloxane has a refractive index of 1.4640 (Example 1). However, Cekada does not teach or fairly suggest that the polydiorganosiloxanes being end-capped hydroxyalkyl groups or aminoalkyl groups.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (703) 306-5550. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson, can be reached on (703) 308-2340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Application/Control Number: 10/004,418

Page 6

Art Unit: 1712

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kuo-Liang Peng

May 16, 2003

A handwritten signature in black ink, appearing to read 'Kuo-Liang Peng', written in a cursive style.